

Assessment of safety culture in organ donation

Avaliação da cultura de segurança no processo de doação de órgãos

Evaluación de la cultura de seguridad en el donación de órganos

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ABSTRACT

Objectives: To evaluate the perception of safety culture by health professionals who work with organ and tissue donation. **Methods:** A quantitative, descriptive study developed with 185 health professionals who act directly and indirectly with organ and tissue donation from two hospitals in the South of Brazil. The data collection was performed between January and July 2017 by using the Safety Attitudes Questionnaire. The analysis took place through descriptive statistics. **Results:** The mean score of the domains evaluated ranged from 41.6, for Perception of management of the unit, and 80.9 for Job satisfaction. Positive perception of safety culture in this study was evidenced only for Job satisfaction with a score higher than 75. **Conclusions:** Of the six domains evaluated, only one had a positive score, evidencing the need to elaborate effective strategies for implanting safety culture in these institutions.

Descriptors: Organizational Culture; Patient Safety; Tissues and Organs Procurement; Health Services Research; Nursing.

RESUMO

Objetivos: Avaliar a percepção da cultura de segurança pelos profissionais de saúde que atuam no processo de doação de órgãos e tecidos. **Métodos:** Estudo quantitativo, descritivo desenvolvido com 185 profissionais de saúde que atuam de maneira direta e indireta no processo de doação de órgãos e tecidos de dois hospitais do Sul do país. A coleta dos dados foi realizada entre janeiro e julho de 2017, utilizando o instrumento *Safety Attitudes Questionnaire*. A análise ocorreu por meio da estatística descritiva. **Resultados:** O escore médio dos domínios avaliados variou entre 41,6, para Percepção da Gerência da Unidade, a 80,9 para Satisfação no trabalho. A percepção positiva da cultura de segurança neste estudo foi evidenciada apenas para Satisfação do trabalho, com escore superior a 75. **Conclusões:** Dos seis domínios avaliados, apenas um teve escore positivo, evidenciando a necessidade de elaboração de estratégias efetivas para a implantação da cultura de segurança nessas instituições.

Descritores: Cultura Organizacional; Segurança do Paciente; Obtenção de Tecidos e Órgãos; Pesquisa sobre Serviços de Saúde; Enfermagem.

RESUMEN

Objetivos: Evaluar la percepción de la cultura de seguridad por los profesionales de salud que actúan en el donación de órganos y tejidos. **Métodos:** Estudio cuantitativo, descriptivo desarrollado con 185 profesionales de salud que actúan de manera directa e indirecta en el donación de órganos y tejidos de dos hospitales del sur del país. La recolección de los datos se realizó entre enero y julio de 2017, utilizando el *Safety Attitudes Questionnaire*. El análisis ocurrió por medio de la estadística descriptiva. **Resultados:** La puntuación promedio de los dominios evaluados varió entre 41,6, para Percepción de la gerencia de la unidad, a 80,9 para Satisfacción en el trabajo. La percepción positiva de la cultura de seguridad en este estudio fue evidenciada sólo para Satisfacción en el trabaj, con una puntuación superior a 75. **Conclusiones:** De los seis dominios evaluados, sólo uno tuvo una puntuación positiva, evidenciando la necesidad de elaborar estrategias efectivas para la implantación de la cultura de seguridad en esas instituciones.

Descriptores: Cultura de la Organización; Seguridad del Paciente; Obtención de Tejidos y Órganos; Investigación en el Servicios de Salud; Enfermería.

INTRODUCTION

Currently, safety culture has been the focus of studies and discussions, assuming considerable importance for patient safety. Minimization of errors, adverse events and reduction of unnecessary damages due to patient care are topics that have solidified. Those were associated with individual and organizational behaviors that seek to establish these commitments continuously, ensuring promotion of safe practices and quality of service⁽¹⁻⁴⁾.

The Ministry of Health differs patient safety from safety culture as the first being the decrease in risk of unnecessary harm associated with care. As a culture, it is based on characteristics approached by the management of the organization in which all workers are committed to their own safety, their colleagues, patients and family members, prioritizing safety above financial and operational goals, as well as providing knowledge, resources and structure for the realization of security⁽⁵⁾.

Safety culture should be seen as an educational process and an opportunity for improvements in health care and quality of care; and in order to be effective, requires that professionals involved in the health process be engaged in perpetuating a safety culture in institutions. In this sense, it is understood the importance of evaluating safety culture in organ donation; since it is quite complex, involving specific care and actions related to the care of a patient with brain death and their relatives, organ packing, distribution of organs to patients who are on the waiting list, in addition to the organization of logistics and the collection and implantation of organs⁽⁶⁾.

In Brazil, the number of organ and tissue donation increases. The number has raised from 1,898 in the year 2010 to 3,415 donations in 2017. In contrast, the number of notifications of potential donors has been much higher than donations effected. In 2017, there were 10,629 notifications from potential donors and only 3,415 donations were done. Of all losses, 2,740 were not done because of family refusal, and 4,474 because of other causes, especially due to cardiac arrest of the potential donor⁽⁷⁾.

Among stages of organ and tissue donation, it is important to highlight that brain death (BD) diagnosis is very complex, involving several members of the health team. In addition to this, it is worth noting that once the BD is installed, a series of hemodynamic changes affect the patient, which can lead to cardiac arrest if the team does not act effectively in this care. Upon completion of this diagnosis, the patient becomes a potential donor, the team having the responsibility and ethical, moral and legal commitment to communicate death to the family. The team also has to notify this potential donor to the *Central Estadual de Transplantes* (CET - State Transplant Center). This should be a rapid process due to deterioration of organs, which may make transplantation unfeasible⁽⁶⁻⁹⁾.

When there is family authorization to donate the organ, the health team should be agile to organize logistics for explant/removal, packaging, identification and transfer of these organs to the destination, where the implant/transplant will be performed⁽⁶⁾. At the organ's arrival, the transplantation team continues with other activities in order to evaluate the conditions of packaging and storage of the organ. The team also reviews the integrity of the packaging and labels, and signs to confirm receipt. The organ

packaging must be aseptic and in a way that maintains the integrity of the organ to avoid contamination during transportation^(6,9).

In order for this process to take place in an effective, safe and quality way, it is necessary to carry out actions within ethical, legal and safe criteria, so that a safety culture is postulated and carried out at each stage of the process. Still, there are many losses of potential donors. These are related to the difficulty in identifying patients with BD criteria; poor team ability to conduct maintenance of potential donor; and the interview for organ donation to relatives, besides the difficulties in the logistics and problems in the storage and packaging of organs⁽⁹⁻¹¹⁾.

Faced with this reality, this study aims to describe safety culture in donation, answering the following question: "How is safety culture perceived by health professionals working with organ and tissue donation, considering the Safety Attitudes Questionnaire?".

OBJECTIVE

To evaluate the perception of safety culture by health professionals who work with organ and tissue donation in the "Great" Florianópolis region by using the Safety Attitudes Questionnaire.

METHOD

Ethical aspects

The study met the ethical recommendations and obtained approval from the granting institutions and release from the Ethics and Research Committee of the *Universidade Estadual de Santa Catarina*.

Design, place of study and period

This is a quantitative, descriptive, cross-sectional study conducted in two large hospitals in the "Great" Florianópolis region, from January to July, 2017. Both of the hospital institutions presented more than 40 notifications of potential donors in the year 2017⁽¹¹⁾.

Sample and criteria of inclusion and exclusion

The study participants were professional nurses, nursing technicians and doctors who work in the Intensive Care Unit (ICU) and Emergency. The population was composed of 360 professionals from both institutions, of which 61 were nurses, 178 nursing technicians or assistants and 121 doctors.

The sample had 187 professionals, considering a 95% significance level according to the sample; and of the 187 invited, two refused to participate, totaling 185 participants. The sample considered the index of significance for each professional category, and information was collected from 39 nurses, 44 doctors and 102 nursing technicians.

As criteria for inclusion, professionals should have worked directly or indirectly for more than a year in some of the stages of donation (identification and validation of possible donors; BD diagnosis; potential donor notification; donation management; logistics coordination; and/or withdrawal of organs) and to be

over 18 years of age. Those professionals who, during the period of data collection, were on vacation or leave, and those who were vacationing in the unit, were excluded.

Collection and organization of data

Data collection was performed by using a tool divided into two parts: the first was related to the sociodemographic and professional characterization of the participants and the second part with the Safety Attitudes Questionnaire - short form 2006 (SAQ), which evaluates the patient safety culture. This tool was adapted for Brazil in 2011 and used in this research with the author's authorization.

SAQ is composed of 41 questions, covering six domains. For each of the questions of the domains answered, a score was applied by following a Likert scale organized as follows: (A) I totally disagree, being equal to zero point; (B) I partially disagree, equal to 25 points; (C) Neutral, equal to 50 points; (D) I agree partially, with 75 points; (E) I fully agree, equal to 100 points; and (X) Not applicable, with zero value (0). Thus, each item answered in the tool received a final score ranging from 0 to 100, where zero represents the worst perception of safety climate; and 100 represents the best perception. Values are considered positive when the total score is greater than or equal to 75⁽¹²⁾.

Analysis of results and statistics

The data were entered in Excel® program, later imported and analyzed, using the program Statistical Package for the Social Sciences (SPSS), version 20. Descriptive statistics were used, where the categorical variables were expressed by frequencies and percentages. Continuous variables with normal distribution were presented by mean and Standard Deviation.

RESULTS

Of the 185 participants, the majority were female, 129 (69.7%), white (154.7%), Catholic 118 (63.8%) and married 71 (38.4%). The mean age was 39 (SD ± 4.1). In relation to schooling, the majority have a university degree of 100 (54.6%) or a complete Higher Education 63 (34.1%), as shown in Table 1.

Regarding the unit of work, 102 (55.1%) of the professionals worked at the Emergency and only 1 (0.6%) worked at the Semi-Intensive Therapy Unit and was a member of CIHDOTT. Of the 185 participants, 102 (55.1%) were nursing technicians. 44 (23.8%) were doctors and 39 (21.1%) were nurses. 66 (35.7%) were on duty in the day; and 66 (35.7%) were on duty at night. The mean weekly workload was 45.7 ± 17.5 hours.

Professional experience's mean time was 13.7 ± 8.1 years of work. Working time in the institution was 8.4 ± 7.1 years and the mean performance in organ and tissue donation was 7.6 ± 6.1 years. Of the 180 (97.2%) professionals responding if they followed the patient safety steps in the donation of tissue, 129 (69.7%) answered said yes, 37 (20%) answered "in parts". 114 (61.6%), most of the participants, said they had not received training on patient safety; and 132 (71.4%) nor safety in donation.

157 (84.9%) reported not having seen an adverse event in the organ and tissue donation, 27 (14.6%) reported having witnessed.

Of these, 8 (29.6%) reported the event to higher levels.

In the open-ended question, when asked about their performance in organ donation, 97 (52.4%) participants answered that they were involved in maintaining the potential donor, 53 (28.6%) did not answer this question.

Table 1 – Sample distribution by professional characterization and socio-demographic variables, Florianópolis, Santa Catarina, Brazil, 2017

Variables	n=185
Gender†	
Female	129 (69.7%)
Age*	39 ± 4.1
Skin color†	
White	154 (83.2%)
Black	9 (4.9)
Mulatto	19 (10.3)
Other	3 (1.6)
Religion†	
Catholic	118 (63.8%)
Evangelical	10 (5.4%)
Jeovah's Witness	2 (1.1%)
Spiritist	25 (13.5%)
Other	30 (16.2%)
Marital status†	
Single	59 (31.9%)
Married	71 (38.4%)
Common-law	38 (20.5%)
Widow(er)	2 (1.1%)
Divorced	15 (8.1%)
Schooling†	
Complete High School	63 (34.1%)
Incomplete Higher Education	20 (10.8%)
Complete Higher Education	100 (54.6%)
Specialization	44 (23.8%)
Residence	17 (9.2%)
Residence and specialization	6 (3.2%)
Master's Degree	12 (6.5%)

Note: *Continuous variables expressed as mean ± Standard Deviation; † Categorical variables expressed as n (%).

The Safety Attitude Questionnaire results are presented divided into six domains, grouping statements that have relations with each other. Among the domains: Teamwork climate; Safety climate; Job satisfaction; Perception of stress; Perception of management (hospital administration and unit management); and Working conditions.

The only domain that scored at or above 75 was Job satisfaction. Other domains had below-mean scores on safety culture. The dimension that obtained the lowest score was related to the perception of the professional to management of the unit, with a mean of 41.6 ± 21.3 (Table 2).

The Work climate domain shows that the best scores are in the items: It is easy for the staff in this area to ask questions when there is something they do not understand; and I have the support I need from other team members to care for patients, with means of 83.2 ± 26.3 and 77.3 ± 27.7, respectively. The items with the lowest scores were: The doctors and nurses here work together as a well-coordinated team, with a mean of 66.2 ± 30.4, and In this area, disagreements are adequately resolved, which was 66.3 ± 30.5. The domain, in general, did not present a positive score, with a mean of 72.6 ± 17.0.

Table 2 – Descriptive analysis of the Safety Attitude Questionnaire (SAQ) domains, Florianópolis, Santa Catarina, Brazil, 2017

Domains	Mean	SD(±)*
Teamwork climate	72.6	17.0
Safety climate	60.2	18.1
Job satisfaction	80.9	28.9
Perception of stress	74.5	25.6
Perception of management	48.4 / 41.6	23.4 / 21.3
Working condition	44.5	28.9

Note: SD = Standard Deviation.

Regarding the Safety climate domain, the data show that the score of this domain was negative (60.2 ± 18.1). The items with the lowest score were: "I receive an appropriate return on my performance", with a mean of 48.0 ± 35.4 , followed by: "In this clinical area, it is difficult to discuss errors", score 52.4 ± 32.6 . The most positive results were in relation to the items: I know the appropriate ways to address issues related to patient safety in this area; and I would feel safe to be treated here as a patient, with a mean of 69 ± 32.2 .

As for the Job satisfaction domain, it was one of the domains with the highest score, presenting a mean score of 80.9 ± 28.9 . Four of the five domain items were well evaluated. Four of the five domain items were well evaluated. Only the "Moral in this clinical area is high" pointed negative score on safety culture, with a mean of 63.6 ± 29.3 . I like my work and I am proud to work in this clinical area, were the items most well scored, 97.9 ± 35.3 and 92.2 ± 34.6 , respectively.

Regarding the domain Perception of stress, which seeks to evaluate the stress experienced daily by the team at work, the data show an approximate ideal score suggested by the tool of 74.5 ± 25.6 . The best item scored (82.9 ± 25.6) was When my workload becomes excessive, my performance is impaired, and the one that received the lowest score was Fatigue impairs my performance during emergency situations, with score of 62.8 ± 38.3 .

Regarding the domain Perception of management, which seeks to evaluate the relationship between health team and the management of the unit and institution, it is observed that the results did not present positive effects. It was one of the domains with the lowest score, mean score between 48.4 ± 23.4 and 41.6 ± 21.3 . The lowest score was for the item Problem team professionals are treated constructively by our hospital/unit management, with a mean of 42 ± 32.6 and 36 ± 30.5 , respectively. Regarding hospital administration, the item with the highest score was The hospital's administration is doing a good job, with a mean of 56.2 ± 32.5 . While the item I receive adequate and timely information on events that may affect my work in the unit administration, it was the best item scored, with a mean of 45 ± 32.3 .

In the domain *Working condition*, we sought to identify the conditions of the unit for the team to carry out its activities. The overall mean of the domain was 44.5 ± 28.9 , considered to be "weak" for the safety culture. The item with the lowest score was *This hospital does a good job with the of training new team members*, with a score of 25.5 ± 18.4 .

DISCUSSION

The results of this research point to relevant aspects regarding safety culture of the patient, associated with organ and tissue

donation; evidence the absence of a postulated safety culture in the units evaluated in almost all areas. These results portray the lack of preparation of professionals, especially those in the management, to deal with issues related to donation and tissues. The results also present, through the analysis of domains, the need for improvements and changes in culture in this process setting.

Studies addressing safety culture related to organ donation are scarce. Literature search reveals only one study involving a bone marrow transplantation unit, which also identified weaknesses in most domains evaluated⁽²⁾.

In this sense, it is understood that the present study includes important information regarding the reality of safety culture in two large hospitals in the South of Brazil, which act directly in organ and tissue donation. Certainly, these data may help governmental and non-governmental authorities in promoting improvements in the transplant system, based on this information, especially in the two institutions where the study was developed.

The SAQ, applied in this research, has been widely used with the objective of evaluating safety culture in several countries, being applied in different sectors, such as infirmary, ICU and surgical center⁽¹³⁻¹⁸⁾. In these studies, most domains resulted in low-score means. In one of them, the domains "Teamwork climate" and "Job satisfaction" presented satisfactory scores⁽¹³⁾. Another brought that only the domain "Job satisfaction" was positive, corroborating with the result of this study⁽¹⁴⁾.

The present study is in agreement with the literature data, presenting almost all the domains with negative results below 75, which is considered "weak" with respect to safety culture⁽¹²⁻¹⁴⁾. This information corroborates the present result in that, of the six domains of the tool, five (83.3%) presented low scores. Only the domain related to job satisfaction showed a positive result.

It is therefore perceived that the aspects that involve the safety culture are fragile and need to be rethought and reviewed by the managers involved in organ and tissue donation. These domains can directly influence the stages of donation, considering that this process is complex, with a need for team cohesion, and a consolidated structure to occur within ethical and legal standards^(6,8).

Regarding the participation of study professionals in organ and tissue donation, the data show that the majority described being involved in the maintenance of the potential organ donor. Only 28.1% (52 participants) reported receiving some kind of training on patient safety in tissue donation. This information presents the professionals' lack of knowledge to act in the steps of this process. This is a long, delicate process that involves several phases, including family issues and ethical and legal aspects^(8,19).

Alongside this, it is worth noting that the staff working in critical patient units often claims difficulties in qualifying for the short time available⁽²⁰⁻²³⁾. The lack of professional training involved in donation constitutes one of the main barriers in this process^(23,24).

Even with the majority of professionals referring to acting at a stage as important as maintaining the potential donor, few have received any kind of training on patient safety. When considering the complexity of the process and the negative results of the domains, the study brings the impact, reflection and concern of the possibility of errors that can arise related to all stages of donation, from BD diagnosis, maintenance of potential donor communication of the death and conduction of the interview

with the family, to the logistics of organ explant. Studies point to the low knowledge of the health team regarding the maintenance of the potential donor of organs and tissues⁽²⁵⁻²⁶⁾. Certainly, these results are consistent with the losses of potential donors presented in Brazil in recent years^(7,10,27).

It is worth noting that, in terms of participants' profile, most were part of the nursing team. Other studies that used the same tool also show greater participation of this team^(15-17,28). In the present study, the population was mostly female professionals. These data are in agreement with the predominant characteristic of nursing professionals registered with the *Conselho Federal de Enfermagem* (Federal Nursing Council)⁽²⁹⁾. This information presents the involvement and participation of these professionals in contributing to the research, as well as seeking to identify opportunities for improvement in the safety culture setting.

One of the dimensions evaluated teamwork climate, which reflects the quality of the relationship and collaboration among professionals. Their data show that doctors and nurses, in the view of professionals, do not work as a well-coordinated team. This domain received the lowest mean in the overall score of 66.2. With regard to one of the donation's stages, BD diagnosis, the team must have the information well elucidated and clear.

Information exchange between the team about this diagnosis should be constant and correct. Doctors, nurses, technicians and nursing assistants need to communicate effectively in order to share events and clinical conditions that have occurred, since at any moment it can destabilize and make impossible the donation that could benefit several other patients⁽²⁸⁾. There is still a fragility of the professionals that work in the Critical Care Units in conducting the diagnosis of BD, tending to cause serious problems in the conclusion of this stage of donation^(24,27).

Workload associated with interpersonal conflicts between the team has been the focus of studies, as well as factors that trigger stress and tension in the work climate⁽³⁰⁻³¹⁾. A favorable work climate contributes to the maintenance of workers' well-being, since if the climate is seen as favorable, less stress is reported⁽³²⁾. A study that investigated the implementation of a team resource management program in organ donation revealed organizational improvements at work, as well as showing benefits to the culture of teamwork as well as patient safety⁽³³⁾.

The *Safety climate* domain also presented low results; its mean scores was 60.2 ± 18.1 . The receipt of an adequate return on work performance was the most poorly evaluated item, with a mean score of 48.0 ± 35.4 , followed by the item referring to the difficulty to discuss errors, with a score of 52.4 ± 32.6 . A team that tends to settle does not receive the proper feedback on its performance and does not argue about mistakes that have occurred.

These factors tend to make the work more fragile, potentiating adverse events and errors in the conduct of care. In donation, these fragilities can have repercussions on errors that involve not identifying the potential donor, loss of possible donors or even loss of organs or the patient who received them. The main causes of not performing the family interview are cardiorespiratory arrest and septicemia⁽³⁴⁾, showing the possibility of failures related to the stage of maintenance of the potential donor, which may be involved with job satisfaction. Unsatisfied professionals tend to let the process go the way it is.

One of the domains evaluated the professionals' view on the institution manager and the unit manager's performances, both evaluated negatively. Regarding hospital management, the mean was 48.4 ± 23.4 ; and for the unit manager, the mean was even lower, 41.6 ± 21.3 . This was the domain with the lowest score among the six domains. In a study that used the same tool in medical and surgical hospitalization units, this dimension was also the lowest score, with a score of 48.5 for the hospital manager and 57.5 for the unit manager⁽³⁵⁾.

Data from this study directly show the professionals' dissatisfaction with managers. This may be related to the lack of planning and implementation of actions aimed at improving the service, which ends up reflecting the lack of security in several aspects of patient care. Considering that the donation is directly related to an effective communication between team professionals who work in Critical Care Units together with professionals who work in the management of hospital units and in the management with the *Central Estadual de Transplante* (State Transplant Center), the data show challenges to be improved by managers at all hierarchical levels involving the donation and transplant setting.

All stages of organ and tissue donation are developed in consonance and partnership with unit teams, health managers and transplant coordinators. Each stage follows a strict sequence, ethical, moral and legal rigor. In case of errors, adverse events, nonconformities or lack of knowledge to follow the predetermined protocols and flows in some of them, the consequence could be the loss of the potential donor, loss of viable organs to be transplanted, or legal, ethical and moral damages.

In this sense, data from this study present impacts on the need for improvements in safety culture of these institutions. They also present opportunities to train the team, making it more prepared and empowered to act with greater safety, effectiveness and quality in organ and tissue donation.

Study limitations

The limitations of this study involved fewer professionals responding the tools due to work overload that prevented them from having time to participate in the research, which led professionals to want to keep the tool and respond at another time. However, the return of this tool at various times was slow.

Contributions to the field of nursing

The study points out the need for improvements in safety culture of these institutions in relation to organ donation. It also presents opportunities for the nurse to devise effective strategies to train the nursing team and other professionals, making this team safer and more capable of acting with greater effectiveness, safety and quality in organ and tissue donation.

CONCLUSION

This study revealed the need for constant reflections regarding fragilities in the safety of the stages conduction of organ and tissue donation by the health team. The results showed that the evaluation of safety culture attitudes in the participating

institutions was perceived positively in only one domain of the tool. This dimension cooperates with the culture of patient safety in organ donation. The other five areas received a lower score, referring to “unit management” and “working conditions”.

Those dimensions that received lower scores require careful intervention in order to encourage professionals to become involved and develop safety attitudes in this process.

Professionals still have difficulties in dealing with donation, even though most refer to acting directly at an important stage, such as maintaining the potential donor for more than seven years.

The results reflect the difficulty in postulating a safety culture in institutions, which must be shared among managers and

professionals. It is expected that the development of this study will enable a safety culture in donation, and serve as a tool for planning improvement actions for managers and authorities in order to postulate a safety culture, especially in participating institutions.

It is highlighted as limitations of the study, the cross-sectional design that does not allow the establishment of relations of cause and effect. In addition, it is important the research to be replicated in other Brazilian institutions that make notifications of potential donors, as well as other sectors involved with the process as a surgical center, in order to identify fragilities and carry out change planning.

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